ABSTRACT

Conventional heat bonding and anodic bonding require heating at high temperature and for a long time, leading to poor production efficiency and occurrence of a warp due to a difference in thermal expansion, resulting in a defective device. Such a problem is solved. An upper wafer 7 made of glass and a lower wafer 8 made of Si are surface-activated using an energy wave before performing anodic bonding, thereby performing bonding at low temperature and increasing a bonding strength. In addition, preliminary bonding due to surface activation is performed before main bonding due to anodic bonding is performed in a separate step or device, thereby increasing production efficiency, and enabling bonding of a three-layer structure without occurrence of a warp.